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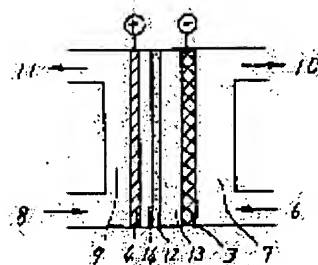
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(54) FUEL CELL

(57)Abstract:

PURPOSE: To increase the performance and the life of a fuel cell by dividing an electrolyte chamber into two parts by means of an ion exchange membrane and installing a highly flowable electrolyte in the oxidant-electrode-side electrolyte chamber and a little flowable electrolyte in the fuel-electrode-side electrolyte chamber.

CONSTITUTION: In a fuel cell where methanol is used as a liquid fuel, the electrode is made by packing a porous carbon base with a platinum system catalyst carried by a carbon powder. A fuel and an oxidant electrode 3 and 4 have almost the same structure. A cation exchange membrane containing a strongly acidic sulfonic acid group is used as a diaphragm 12. Between the diaphragm 12 and the fuel electrode 3, an electrolyte 13 is interposed which is a pasty material prepared by kneading pulverized silicone carbide treated with a binding agent with a polystyrene sulfonate having a molecular weight of about 100,000 in a ratio of about 1 to 1 before the mixture is crushed and kneaded with an acid solution. Between the diaphragm 12 and the oxidant electrode 4, an electrolyte 14 is interposed which consists of an aqueous solution of a polystyrene sulfonate having a molecular weight of about 10,000.



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